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Colombia wind and solar hybrid power generation system





Overview

How can wind and solar energy be used in Colombia?

The expected large deployment of wind and solar resources in Colombia can be used to leverage creation of local employment, gender equality and benefits to local communities and Indigenous peoples. This will require strengthened policy frameworks to avoid negative effects on these areas.

Will Colombia increase its solar and wind farms installed capacity?

Colombia aims to increase its solar and wind farms installed capacity (IC) in future. The system operator expects more than 11 GW of installed capacity from these sources in the National Interconnected System by 2027, which is more than 60 % of the current total IC .

How much solar power will Colombia have by 2030?

Colombia expects more than 10 GW of solar and wind power capacity by 2030. We quantify the flexibility requirements for the net load and ramps. Conventional reserves must be doubled at noon. Conventional generators must provide 7%-10% of additional ramps. Multiple factors drive the energy transition toward power systems based on renewable energies.

Will the Colombian power system experience a curtailment in renewable power generation?

Simulations show that the Colombian power system will not experience curtailments in renewable power generation until 2030. However, our analysis for 2050 indicates a potential for substantial curtailment, underscoring the need for careful planning and adaptation.



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